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EXAMINER

LAVILLA, MICHAEL E

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

2591

Office Action Summary

Application No.

09/914,923

Applicant(s)

STORSTEIN ET AL.

Examiner

Michael La Villa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:
2. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 15-17, 20, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding Claims 15 and 20, it is unclear where the originally filed specification teaches SiC reinforcing particles of the claimed volumetric percentages.

Paragraph 16 relates to SiC particles of the claimed volumetric percentages, but only in the context of other unclaimed limitations. Hence, Claims 15 and 20 appear to comprise new matter. Regarding Claims 16 and 21, it is unclear where the originally filed specification teaches SiC reinforcing particles of the claimed size and volumetric percentages. Paragraph 16 also relates to this limitation, but only in the context of other unclaimed limitations. Hence, Claims 16 and 21 appear to comprise new matter. Regarding Claim 17, it is unclear where the originally filed Specification teaches teaches NaOH etching for 1 to 3 minutes. Paragraph 20 relates to the etching time of the claimed duration in the context of other unclaimed limitations. Hence, Claim 17 appears to comprise new matter.

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
5. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 9-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - I. Regarding Claims 9 and 18, it is unclear what is meant by the phrases "providing at least one of a brake disc and a clutch plate" and "a friction member on each of the at least one of a brake disc and a clutch plate." When "one is present," it is unclear whether the claim requires one brake disc and one clutch plate or whether the claim requires one brake disc or one clutch plate. When more than one are present, as when two are present, it is unclear what elements are required. Must there be two brake discs, two clutch plates, and/or one brake disc and one clutch plate?
 - II. Regarding Claims 16 and 21, it is unclear whether the claimed particle size dimensions are correct. Figures 3 and 4 depict particles that are considerably smaller than 5 mils. Paragraph 16 refers to particles of the claimed size, however. Nevertheless, it is unclear whether the claimed mils units of particle size are correct.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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8. A person shall be entitled to a patent unless –
9. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
10. Claims 9, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by

Ross et al. teaches forming a brake disc from a PMMC material, wherein the material may comprise SiC ceramic dispersed in Al-Si matrix. Ross teaches that the entire disc is formed from the PMMC material and then the surface region is formed by careful machining. See Ross et al. (Abstract; col. 4, line 33 through col. 5, line 13; and Figures 1-3). It would be expected that upon use in a braking apparatus the top surface of the brake disc would wear, resulting in removal of the matrix material and protruded ceramic material.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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13. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhard et al. USP 4,180,622. Burkhard teaches a brake disc that is coated with an aluminum/ceramic coating. See Burkhard (col. 3, line 34 through col. 6, line 12). It would be expected that upon use in a braking apparatus the top surface of the brake disc lining would wear, resulting in removal of matrix material and protruded ceramic material. Burkhard may not exemplify enough aluminum in the coating layer in order to characterize the aluminum as forming a matrix, but Burkard does teach that layers having greater than the exemplified amounts of aluminum are effective. It would have been obvious to one of ordinary skill in the art at the time of the invention to use coatings having increased amounts of aluminum than those that are exemplified, thereby forming coatings having an aluminum matrix, as Burkhard teaches that such coatings form effective lining materials. Burkhard does not exemplify an aluminum alloy matrix material, but does teach that using an alloy material is effective. It would have been obvious to one of ordinary skill in the art at the time of the invention to coat the disc with an aluminum alloy material, rather than pure aluminum material, as Burkhard teaches that alloys form effective coating materials.

Response to Amendment

- I. In view of applicant's amendments and arguments, applicant traverses the section 112, second paragraph rejection, the section 102 rejections

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over Isoyama, Bader, Takahashi, and Liechti, and the section 103 rejection over Isoyama in view Farnworth of the Office Action mailed on 16 April 2003. Rejections are withdrawn.

- II. The substitute Specification, filed on 16 October 2003 has been entered.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is

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(703) 308-4428. The examiner can normally be reached on Monday through Friday.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

18. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Michael La Villa
December 16, 2003

A handwritten signature in black ink, appearing to read 'La Villa', written over the typed name and date.